

1 This listing of claims will replace all prior versions, and listings, of claims  
2 in the application.

3  
4 **Listing of Claims:**

5  
6 Claim 1 (Currently amended): A method for facilitating enhanced  
7 readability of a fixed digital document having multiple pages, the method  
8 comprising:

9 obtaining the fixed digital document, wherein the fixed digital document  
10 cannot be modified using a character based application;

11 paginating the multiple pages of the fixed digital document into multiple  
12 virtual pages through a virtual paging zoom and pan paradigm;

13 identifying and locating lines of text within the multiple pages of the fixed  
14 digital document;

15 determining whether a virtual-page boundary is coextensive with an  
16 identified line of text;

17 responsive to such determining, adjusting the virtual-page boundary if the  
18 boundary is coextensive with the identified line of text so that the boundary is not  
19 coextensive with the identified line.

20  
21 Claim 2 (Original): A method as recited in claim 1 further comprising  
22 displaying a virtual page of the multiple virtual pages and doing so without  
23 displaying overlap.

1        Claim 3 (Original): A method as recited in claim 1 further comprising  
2 displaying virtual pages of the multiple virtual pages, wherein unrepeated content  
3 of multiple virtual pages starts at a common spatial position on the multiple virtual  
4 pages.

5  
6        Claim 4 (Original): A method as recited in claim 1 further comprising  
7 displaying virtual pages of the multiple virtual pages, wherein a top synthetic  
8 virtual-page margin is displayed so that the content of the virtual page starts at a  
9 common spatial position.

10  
11        Claim 5 (Original): A method as recited in claim 1, wherein the identifying  
12 and locating comprises performing at least minimal OCR on content of the  
13 document to locate line boundaries.

14  
15        Claim 6 (Original): A method as recited in claim 1, wherein the paginating  
16 comprises determining a minimum integer number of virtual pages per page of the  
17 digital document while maintaining legibility, aspect ratio, and good margins.

18  
19        Claim 7 (Original): A computer comprising one or more computer-  
20 readable media having computer-executable instructions that, when executed by  
21 the computer, perform the method as recited in claim 1.

22  
23        Claim 8 (Original): A computer-readable medium having computer-  
24 executable instructions that, when executed by a computer, performs the method  
25 as recited in claim 1.

1  
2 Claim 9 (Currently amended) A method for facilitating enhanced  
3 readability of a digital document, the method comprising:

4 paginating multiple pages of [[a]] the digital document into multiple virtual  
5 pages, wherein the digital document is a fixed digital document which cannot be  
6 modified using a character based application;

7 placing a virtual-page boundary so that such boundary is not coextensive  
8 with a line of text.

9  
10 Claim 10 (Canceled)

11  
12 Claim 11 (Previously presented): A method as recited in claim 9 further  
13 comprising identifying and locating lines of text within the multiple pages of the  
14 digital document.

15  
16 Claim 12 (Original): A method as recited in claim 9 further comprising  
17 determining whether a virtual-page boundary is coextensive with a line of text.

18  
19 Claim 13 (Original): A method as recited in claim 12 further comprising  
20 responsive to such determining, adjusting the virtual-page boundary if the  
21 boundary is coextensive with a line of text so that the boundary is not coextensive  
22 with the line.

1           Claim 14 (Original): A method as recited in claim 9 further comprising  
2 displaying a virtual page of the multiple virtual pages and doing so without  
3 displaying overlap.

4  
5           Claim 15 (Original): A method as recited in claim 9 further comprising  
6 displaying virtual pages of the multiple virtual pages, wherein unrepeated content  
7 of multiple virtual page starts at a common spatial position on the multiple virtual  
8 page.

9  
10          Claim 16 (Original): A method as recited in claim 9, wherein the  
11 paginating comprises determining a minimum integer number of virtual pages per  
12 page of the digital document while maintaining legibility, aspect ratio, and good  
13 margins.

14  
15          Claim 17 (Original): A computer comprising one or more computer-  
16 readable media having computer-executable instructions that, when executed by  
17 the computer, perform the method as recited in claim 9.

18  
19          Claim 18 (Original): A computer-readable medium having computer-  
20 executable instructions that, when executed by a computer, performs the method  
21 as recited in claim 9.

1 Claim 19 (Currently amended): A method for facilitating enhanced  
2 readability of a digital document, the method comprising:

3 paginating multiple pages of the digital document into multiple virtual  
4 pages, wherein the digital document is a fixed digital document which cannot be  
5 modified using a character based application;

6 displaying the virtual pages of the multiple virtual pages and doing so  
7 without displaying overlap.

8  
9 Claim 20 (Canceled)

10  
11 Claim 21 (Original): A method as recited in claim 19, wherein the  
12 paginating comprises separating the one or more pages of the digital document  
13 into multiple virtual pages without splitting lines of text of the document.

14  
15 Claim 22 (Original): A method as recited in claim 19, wherein the  
16 paginating comprises:

17 identifying lines of text within the digital document;

18 separating the one or more pages of the digital document into multiple  
19 virtual pages between lines of text.

20  
21 Claim 23 (Original): A computer comprising one or more computer-  
22 readable media having computer-executable instructions that, when executed by  
23 the computer, perform the method as recited in claim 19.

1 Claim 24 (Original): A method as recited in claim 19, wherein the  
2 paginating comprises determining a minimum integer number of virtual pages per  
3 page of the digital document while maintaining legibility, aspect ratio, and good  
4 margins.

5  
6 Claim 25 (Original): A computer-readable medium having computer-  
7 executable instructions that, when executed by a computer, performs the method  
8 as recited in claim 19.

9  
10 Claim 26 (Currently amended): A method for enhancing the readability of  
11 a fixed digital document, the method comprising:

12 paginating multiple pages of the fixed digital document which cannot be  
13 modified using a character based application, into multiple virtual pages;

14 displaying the virtual pages of the multiple virtual pages, wherein  
15 unrepeatd content of multiple virtual page starts at a common spatial position on  
16 the multiple virtual page;

17 lowlighting repeated content on a virtual page, the repeated content is  
18 content repeated from another virtual page.

19  
20 Claim 27 (Canceled)

21  
22 Claim 28 (Original): A method as recited in claim 26, wherein the  
23 paginating comprises separating the one or more pages of the digital document  
24 into multiple virtual pages without splitting lines of text of the document.  
25

1           Claim 29 (Original): A method as recited in claim 26, wherein the  
2 paginating comprises:

3           identifying lines of text within the digital document;  
4           separating the one or more pages of the digital document into multiple  
5 virtual pages between identified lines of text.  
6

7           Claim 30 (Original): A method as recited in claim 26, wherein the  
8 paginating comprises determining a minimum integer number of virtual pages per  
9 page of the digital document while maintaining legibility, aspect ratio, and good  
10 margins.  
11

12           Claim 31 (Original): A computer comprising one or more computer-  
13 readable media having computer-executable instructions that, when executed by  
14 the computer, perform the method as recited in claim 26.  
15

16           Claim 32 (Original): A computer-readable medium having computer-  
17 executable instructions that, when executed by a computer, performs the method  
18 as recited in claim 26.  
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25

1 Claim 33 (Currently amended): A method for facilitating enhanced  
2 readability of a fixed digital document, the method comprising:

3 paginating multiple pages of the fixed digital document which cannot be  
4 modified using a character based application, into multiple virtual pages;

5 displaying one or more virtual pages of the multiple virtual pages and doing  
6 so with overlap on a virtual page, wherein the overlap of one virtual page includes  
7 content of the document repeated from another virtual page;

8 indicating such overlap during the displaying, wherein the content of  
9 overlap is differentiated from other content.

10  
11 Claim 34 (Original): A method as recited in claim 33, wherein the overlap  
12 is lowlighted.

13  
14 Claim 35 (Original): A method as recited in claim 33, wherein unrepeated  
15 content of multiple virtual page starts at a common spatial position on the multiple  
16 virtual page.

17  
18 Claim 36 (Original): A method as recited in claim 33, wherein the overlap  
19 is softly lowlighted.

20  
21 Claim 37 (Original): A method as recited in claim 33, wherein the overlap  
22 is shaded.

23  
24 Claim 38 (Original): A method as recited in claim 33, wherein the overlap  
25 is "grayed."



1  
2 Claim 39 (Original): A method as recited in claim 33, wherein the  
3 paginating comprises determining a minimum integer number of virtual pages per  
4 page of the digital document while maintaining legibility, aspect ratio, and good  
5 margins.

6  
7 Claim 40 (Original): A computer comprising one or more computer-  
8 readable media having computer-executable instructions that, when executed by  
9 the computer, perform the method as recited in claim 33.

10  
11 Claim 41 (Original): A computer-readable medium having computer-  
12 executable instructions that, when executed by a computer, performs the method  
13 as recited in claim 33.

14  
15 Claim 42 (Currently amended): A method for facilitating the enhanced  
16 readability of a digital document, the method comprising:

17 determining an integer number of virtual pages per page of the digital  
18 document while maintaining legibility, aspect ratio, and good margins, wherein  
19 the digital document is a fixed digital document having multiple pages and cannot  
20 be modified using a character based application; and

21 paginating, accordingly, the multiple pages of the digital document into  
22 multiple virtual pages.  
23  
24  
25

1        Claim 43 (Original): A method as recited in claim 42, wherein the  
2 determining determines the minimum integer number of virtual pages per page of  
3 the digital document.

4  
5        Claim 44 (Canceled)

6  
7        Claim 45 (Original): A method as recited in claim 42 further comprising  
8 displaying one or more of the virtual pages.

9  
10       Claim 46 (Original): A computer-readable medium having computer-  
11 executable instructions that, when executed by a computer, performs the method  
12 as recited in claim 42.

13  
14       Claim 47 (Currently amended): A reading enhancement system,  
15 comprising:

16       a document obtainer configured to obtain a digital document, wherein the  
17 digital document is a fixed digital document having multiple pages and cannot be  
18 modified using a character based application;

19       a virtual paginator configured to paginate the multiple pages of the digital  
20 document into multiple virtual pages, the virtual pages having boundaries there  
21 between;

22       a virtual-page analyzer configured to analyze the virtual page; and

23       a display generator configured to generate and send the virtual pages of the  
24 multiple virtual pages to a display.

1 Claim 48 (Original): A system as recited in claim 47, wherein the analyzer  
2 is further configured to:

3 identify and locate lines of text within the one or more pages of the digital  
4 document;

5 determine whether a virtual-page boundary is coextensive with an identified  
6 line of text;

7 responsive to such determining, adjust the virtual-page boundary if the  
8 boundary is coextensive with the identified line of text so that the boundary is not  
9 coextensive with the identified line.

10  
11 Claim 49 (Original): A system as recited in claim 47, wherein the analyzer  
12 is further configured to produce lowlighted overlap, wherein the overlap of one  
13 virtual page includes content of the document repeated from another virtual page.

14  
15 Claim 50 (Original): A system as recited in claim 47, wherein the virtual  
16 paginator is further configured to determine a minimum integer number of virtual  
17 pages per page of the digital document while maintaining legibility, aspect ratio,  
18 and good margins.

19  
20 Claim 51 (Currently amended): A computer-readable medium having  
21 computer-executable instructions that, when executed by a computer, performs the  
22 method comprising:

23 paginating multiple pages of a digital document into multiple virtual pages  
24 and cannot be modified using a character based application, wherein the digital  
25 document is a fixed digital document having multiple pages;

1 placing a virtual-page boundary so that such boundary is not coextensive  
2 with an identified line of text.

3  
4 Claim 52 (Previously presented): A computer-readable medium having  
5 computer-executable instructions that, when executed by a computer, performs the  
6 method comprising:

7 paginating multiple pages of a digital document into multiple virtual pages;  
8 displaying one or more virtual pages of the multiple virtual pages and doing  
9 so with lowlighted overlap, wherein the overlap of one virtual page includes  
10 content of the document repeated from another virtual page.